

AMENDMENTS TO CLAIMS:

The listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) An information categorizing method comprising:

a step of acquiring, through a clustering module, a plurality of search results searched by a search service,

a step of performing, through the clustering module, a clustering process on the search results that categorizes the search results into a clustering result that comprises a plurality of clusters, each cluster having an identifier and all search results assigned to that cluster by the clustering process, the identifiers being presented in a non-hierarchical arrangement,

a step of generating a non-hierarchical clustering result summary table representing a summary of the clustering result, the non-hierarchical clustering result summary table containing no search results, and

a step of outputting the non-hierarchical summary table together with the clustering result such that all of the search results are displayed, each search result being displayed in one or more of the clusters,

wherein neither the clustering process performing step nor the clustering result is based on any predefined categories and wherein the summary table and the clustering result are distinct.

2. (Previously Presented) An information categorizing method according to claim 1, further comprising a step of converting, through a converter module, the search result searched by the search service into a format that is processed by the clustering module.

3. (Previously Presented) An information categorizing method according to claim 2, wherein the converter module is arranged correspondingly to each of a plurality of search services when the clustering process is performed correspondingly to the plurality of search services.

4. (Previously Presented) An information categorizing method according to claim 3, wherein a search process is performed using one search service selected from the plurality of search services and the clustering process is performed on the search result searched by the selected search service.

5. (Previously Presented) An information categorizing method according to claim 3, wherein search processes are performed in parallel using at least two search services of the plurality of search services, respective search results are collected, and the clustering process is performed on the collected search results.

6. (Previously Presented) An information categorizing method according to claim 3, wherein search processes are performed in parallel using at least two search services of the plurality of search services, and the clustering process is individually performed on the search results.

7. (Previously Presented) An information categorizing method according to claim 1, wherein when the clustering process is performed on the search result, information to be clustered is at least one of the title of a document, a URL address, an update date, and a file size of an individual search result.

8. (Previously Presented) An information categorizing method according to claim 1, wherein the order of the clustering result is rearranged using a score indicating the degree of match between the clustering result and a search request for each document and the clustering result with the order thereof rearranged is then output.

9. (Previously Presented) An information categorizing method according to claim 8, wherein the rearranging process of the cluster order comprises a step of calculating the average of scores of the documents contained in each cluster to treat the average of each cluster as a cluster score, and a step of rearranging the cluster order using the cluster scores.

10. (Previously Presented) An information categorizing method according to claim 8, wherein the rearranging process of the cluster order comprises a step of determining the maximum value of the scores of the documents in each cluster to

treat the maximum score of each cluster as the cluster score, and a step of rearranging the cluster order using the cluster scores.

11. (Previously Presented) An information categorizing method according to claim 8, wherein the rearranging process of the cluster order comprises a step of determining a score at a midway point or a substantially midway point in each cluster when the documents contained in each cluster are arranged in the order of magnitude of scores assigned thereto, to treat the score at the midway point or the substantially midway point as the cluster score, and a step of rearranging the cluster order using the cluster scores.

12. (Previously Presented) An information categorizing method according to claim 9, wherein the cluster score determining step for rearranging the cluster order is individually performed correspondingly to the plurality of search services when the clustering process is performed correspondingly to the search results provided by the plurality of search services.

13. (Previously Presented) An information categorizing method according to claim 7, wherein the clustering process is performed based on a feature, and wherein the title of each document is detected and a word characteristic of and contained in the title is extracted as the feature.

14. (Previously Presented) An information categorizing method according to claim 8, wherein the manner of outputting the clustering result with the cluster order rearranged comprises displaying the clusters in the order of the magnitude of scores from a high score to a low score and wherein when there are clusters having the same cluster score, one of the clusters having a larger number of documents therewithin is positioned higher in the cluster order.

15. (Canceled)

16. (Previously Presented) An information categorizing method according to claim 1, wherein the clustering result summary table includes a cluster name of each cluster which is obtained through the clustering process.

17. (Previously Presented) An information categorizing method according to claim 16, wherein the clustering result is mutually linked with the clustering result summary table, wherein when a cluster name portion of the clustering result summary table is designated, the corresponding cluster portion of the clustering result is displayed, and wherein when one cluster portion of a clustering result is designated, the clustering result summary table is displayed.

18. (Previously Presented) An information categorizing method according to claim 17, wherein when a cluster name portion of the clustering result summary table is designated to display the corresponding cluster portion of the clustering result, the head portion of an outline surrounding the cluster or the last line in the outline of the cluster present immediately prior to the first cluster is displayed on the top of a screen.

19. (Previously Presented) An information categorizing method according to claim 18, wherein when the one cluster portion of the clustering result is designated to display the clustering result summary table, the clustering result summary table is displayed with the head portion thereof appearing first on the screen.

20. (Previously Presented) An information categorizing method according to claim 16, wherein the arrangement order of clusters forming the clustering result summary table agrees with the arrangement order of the clusters in the clustering result.

21. (Previously Presented) An information categorizing method according to claim 16, wherein when the clustering result summary table is displayed, the manner of displaying the cluster names is changed in the clustering result summary table depending on the importance of each cluster in response to the clustering result.

22. (Previously Presented) An information categorizing method according to claim 16, wherein when a plurality of documents to be clustered are the ones which have been searched using a keyword input by a user, the manner of

displaying the cluster names containing the keyword input by the user is different in the clustering result summary table from the other cluster names.

23. (Currently Amended) An information categorizing apparatus comprising:

a clustering module for acquiring a plurality of search results searched by a search service, performing a clustering process on the search results that categorizes the search results into a clustering result that comprises a plurality of clusters, each cluster having an identifier and all search results assigned to that cluster by the clustering process, the identifiers being presented in a non-hierarchical arrangement,

a summary table generator module for generating a non-hierarchical clustering result summary table representing a summary of the clustering result, the non-hierarchical clustering result summary table containing no search results, and

a display control unit for outputting the non-hierarchical summary table together with the clustering result such that all of the search results are displayed, each search result being displayed in one or more of the clusters,

wherein neither the clustering process nor the clustering result is based on any predefined categories and wherein the summary table and the clustering result are distinct.

24. (Previously Presented) An information categorizing apparatus according to claim 23, further comprising a converter module for converting the search result searched by the search service into a format that is processed by the clustering module.

25. (Currently Amended) An information categorizing apparatus according to claim 23, further ~~comprises~~ comprising a cluster order setting module which rearranges the order of the clustering result using a score indicating the degree of match between the clustering result and a search request for each document and outputs the clustering result with the order thereof rearranged.

26. (Canceled)

27. (Previously Presented) A storage medium storing an information categorizing software program in which a clustering module performs a clustering process on a plurality of search results that have been searched by a search service in response to a search request of a user, and outputs the clustering result, the information categorizing software program comprising:

a step of acquiring the search result from the search service,

a step of performing the clustering process on the acquired search result that categorizes the search results into a clustering result that comprises a plurality of clusters, each cluster having an identifier and all search results assigned to that cluster by the clustering process, the identifiers being presented in a non-hierarchical arrangement,

a step of generating a non-hierarchical clustering result summary table representing a summary of the clustering result, the non-hierarchical clustering result summary table containing no search results, and

and a step of outputting the summary table together with the clustering result such that all of the search results are displayed, each search result being displayed in one or more of the clusters,

wherein neither the clustering process performing step nor the clustering result is based on any predefined categories and wherein the summary table and the clustering result are distinct.

28. (Previously Presented) A storage medium storing an information categorizing software program according to claim 27, wherein the step of performing the clustering process is performed subsequent to a step of converting the search result searched by the search service into a format that is processed by the clustering module.

29. (Previously Presented) A storage medium storing an information categorizing software program according to claim 27, comprising a step of rearranging the order of the clustering result using a score indicating the degree of match between the clustering result and a search request for each document and a step of outputting the clustering result with the order thereof rearranged.

30. (Canceled)

31. (Previously Presented) A method for categorizing digital information, comprising the steps of:

acquiring at least one group of a plurality of digital items from at least one search of a database or network;

extracting from each item in at least one group of a plurality of digital items selected cluster-indexing information comprising at least one of title, URL address, update date, and file size;

clustering the plurality of digital items in at least one group according to each of the selected cluster-indexing information into a clustering result that comprises a plurality of clusters, each cluster having an identifier and the selected cluster-indexing information of all the search-acquired items assigned to that cluster, the identifiers being presented in a non-hierarchical arrangement;

generating a non-hierarchical clustering result summary table representing a summary of the clustering result, the non-hierarchical clustering result summary table containing no search results; and

outputting the clustering result together with the summary table such that the selected cluster-indexing information of all of the search-acquired items are displayed, each selected cluster-indexing information being displayed in one or more of the clusters,

wherein neither the clustering nor the cluster result is based on any predefined categories and wherein the summary table and the clustering result are distinct.

32. (Previously Presented) The method according to claim 31, further comprising converting each of the acquired digital items into a common format before performing the clustering.

33. (Previously Presented) The method according to claim 31, wherein the at least one group of a plurality of digital items is acquired by selecting only one such group from a plurality of groups, each group being the result of an independent search, and wherein the clustering is performed on the selected one group.

34. (Previously Presented) The method according to claim 31, wherein the at least one group of a plurality of digital items acquired comprises a plurality of such groups, each group being the result of an independent search performed in parallel with one another, and wherein the clustering is performed on the collective search results.

35. (Previously Presented) The method according to claim 31, wherein the at least one group of a plurality of digital items acquired comprises a plurality of such groups, each group being the result of an independent search performed in parallel with one another, and wherein the clustering is individually performed on the search results.

36. (Previously Presented) The method according to claim 31, wherein, when a plurality of clusters are formed, the clustering comprises rearranging the order of the clusters based on individual cluster scores, each of which indicates the degree of match between the digital items in that cluster and a corresponding search query, and wherein the outputting comprises outputting the clusters in their rearranged order.

37. (Previously Presented) The method according to claim 36, wherein the rearranging comprises calculating a value for each digital item in each cluster indicating the degree of match between that item and the corresponding search query, and calculating for each cluster the average of the values of each digital item in that cluster to generate the score for that cluster, and rearranging the cluster order using the cluster scores.

38. (Previously Presented) The method according to claim 36, wherein the rearranging comprises calculating a value for each digital item in each cluster indicating the degree of match between that item and the corresponding search query, determining the maximum value in each cluster, assigning the maximum value of each cluster as the score for that cluster, and rearranging the cluster order using the cluster scores.

39. (Previously Presented) The method according to claim 36, wherein the rearranging comprises calculating a value for each digital item in each cluster

indicating the degree of match between that item and the corresponding search query, determining the middle or substantially middle value in magnitude in each cluster, assigning the middle or substantially middle value in each cluster as the score for that cluster, and rearranging the cluster order using the cluster scores.

40. (Previously Presented) The method according to claim 36, wherein the at least one group of a plurality of digital items acquired comprises a plurality of such groups, each group being the result of an independent search performed in parallel with one another, and wherein the clustering and the rearranging of cluster order is individually performed on the search results.

41. (Previously Presented) The method according to claim 31, wherein the title of each digital item in at least one group of a plurality of digital items is extracted, each title being defined by selected characters in the corresponding digital item, the selected characters being identified by one of location, size and a fixed number of words in from a designated beginning of the digital item, and wherein the identified selected characters are extracted and clustering is performed based on the selected characters extracted.

42. (Previously Presented) The method according to claim 36, wherein the outputting of the clusters in rearranged order comprises displaying the clusters in the order of score magnitude from a high score to a low score, with clusters having the same score being displayed in the order of item number from a larger number to a smaller number.

43. (Canceled)

44. (Previously Presented) The method according to claim 31, wherein the clustering result summary table includes a cluster name of each cluster which is obtained through the clustering.

45. (Previously Presented) The method according to claim 44, wherein the cluster result is mutually linked with the clustering result summary table, wherein, when a cluster name portion of the clustering result summary table is

designated, the corresponding portion of the cluster result is displayed, and wherein when one portion of a cluster result is designated, the clustering result summary table is displayed.

46. (Previously Presented) The method according to claim 31, wherein when the clustering result summary table is displayed, the manner of displaying the cluster names in the clustering result summary table is based on the importance of each cluster in response to the cluster result.

47. (Previously Presented) An information categorizing apparatus comprising:

a clustering module configured to

acquire at least one group of a plurality of digital items from at least one search of a database or network,

extract from each item in at least one group of a plurality of digital items selected cluster-indexing information comprising at least one of title, URL address, update date, and file size,

cluster the plurality of digital items in at least one group according to each of the selected cluster-indexing information into a clustering result that comprises a plurality of clusters, each cluster having an identifier and the selected cluster-indexing information of all the search-acquired items assigned to that cluster, the identifiers being presented in a non-hierarchical arrangement,

a summary table generator module configured to

generate a non-hierarchical clustering result summary table that summarizes the clustering result, the non-hierarchical clustering result summary table containing no search results; and

a display control unit configured to

output the summary table together with the clustering result such that the selected cluster-indexing information of all of the search-acquired items are displayed, each selected cluster-indexing information being displayed in one or more of the clusters,

wherein neither the cluster operation nor the cluster result is based on any predefined categories and wherein the summary table and the clustering result are distinct.

48. (Previously Presented) An information categorizing apparatus according to claim 47, further comprising:

a converter module that converts each of the acquired digital items into a common format that is processed by the clustering module.

49. (Previously Presented) An information categorizing apparatus according to claim 47, further comprising:

a cluster order setting module configured to

rearranging, when a plurality of clusters are formed, the order of the clusters based on individual cluster scores, each of which indicates the degree of match between the digital items in that cluster and a corresponding search query, and

wherein the clustering module outputs the clusters in their rearranged order.

50. (Canceled)

51. (Previously Presented) A device-readable medium containing a program of instructions for categorizing digital information, the program of instructions comprising instructions for:

acquiring at least one group of a plurality of digital items from at least one search of a database or network;

extracting from each item in at least one group of a plurality of digital items selected cluster-indexing information comprising at least one of title, URL address, update date, and file size;

clustering the plurality of digital items in at least one group according to each of the selected cluster-indexing information into a clustering result that comprises a plurality of clusters, each cluster having an identifier and the selected cluster-indexing information of all the search-acquired items assigned to that cluster, the identifiers being presented in a non-hierarchical arrangement;

generating a non-hierarchical clustering result summary table representing a summary of the cluster result, the non-hierarchical clustering result summary table containing no search results; and

outputting the summary table together with the clustering result such that the selected cluster-indexing information of all of the search-acquired items are displayed, each selected cluster-indexing information being displayed in one or more of the clusters,

wherein neither the clustering nor the clustering result is based on any predefined categories and wherein the summary table and the clustering result are separate.

52. (Previously Presented) The device-readable medium according to claim 51, further comprising converting each of the acquired digital items into a common format before performing the clustering.

53. (Previously Presented) The device-readable medium according to claim 51, wherein the at least one group of a plurality of digital items is acquired by selecting only one such group from a plurality of groups, each group being the result of an independent search, and wherein the clustering is performed on the selected one group.

54. (Previously Presented) The device-readable medium according to claim 51, wherein the at least one group of a plurality of digital items acquired comprises a plurality of such groups, each group being the result of an independent search performed in parallel with one another, and wherein the clustering is performed on the collective search results.

55. (Previously Presented) The device-readable medium according to claim 51, wherein the at least one group of a plurality of digital items acquired comprises a plurality of such groups, each group being the result of an independent search performed in parallel with one another, and wherein the clustering is individually performed on the search results.

56. (Previously Presented) The device-readable medium according to claim 51, wherein, when a plurality of clusters are formed, the clustering comprises rearranging the order of the clusters based on individual cluster scores, each of which indicates the degree of match between the digital items in that cluster and

a corresponding search query, and wherein the outputting comprises outputting the clusters in their rearranged order.

57. (Previously Presented) The device-readable medium according to claim 56, wherein the rearranging comprises calculating a value for each digital item in each cluster indicating the degree of match between that item and the corresponding search query, and calculating for each cluster the average of the values of each digital item in that cluster to generate the score for that cluster, and rearranging the cluster order using the cluster scores.

58. (Previously Presented) The device-readable medium according to claim 56, wherein the rearranging comprises calculating a value for each digital item in each cluster indicating the degree of match between that item and the corresponding search query, determining the maximum value in each cluster, assigning the maximum value of each cluster as the score for that cluster, and rearranging the cluster order using the cluster scores.

59. (Previously Presented) The device-readable medium according to claim 56, wherein the rearranging comprises calculating a value for each digital item in each cluster indicating the degree of match between that item and the corresponding search query, determining the middle or substantially middle value in magnitude in each cluster, assigning the middle or substantially middle value in each cluster as the score for that cluster, and rearranging the cluster order using the cluster scores.

60. (Previously Presented) The device-readable medium according to claim 56, wherein the at least one group of a plurality of digital items acquired comprises a plurality of such groups, each group being the result of an independent search performed in parallel with one another, and wherein the clustering and the rearranging of cluster order is individually performed on the search results.

61. (Previously Presented) The device-readable medium according to claim 51, wherein the title of each digital item in at least one group of a plurality of digital items is extracted, each title being defined by selected characters in the corresponding digital item, the selected characters being identified by one of

location, size and a fixed number of words in from a designated beginning of the digital item, and wherein the identified selected characters are extracted and clustering is performed based on the selected characters extracted.

62. (Previously Presented) The device-readable medium according to claim 56, wherein the outputting of the clusters in rearranged order comprises displaying the clusters in the order of score magnitude from a high score to a low score, with clusters having the same score being displayed in the order of item number from a larger number to a smaller number.

63. (Canceled)

64. (Previously Presented) The device-readable medium according to claim 51, wherein the clustering result summary table includes a cluster name of each cluster which is obtained through the clustering.

65. (Previously Presented) The device-readable medium according to claim 64, wherein the cluster result is mutually linked with the clustering result summary table, wherein, when a cluster name portion of the clustering result summary table is designated, the corresponding portion of the cluster result is displayed, and wherein when one portion of a cluster result is designated, the clustering result summary table is displayed.

66. (Previously Presented) The device-readable medium according to claim 51, wherein when the clustering result summary table is displayed, the manner of displaying the cluster names in the clustering result summary table is based on the importance of each cluster in response to the cluster result.